
# *Discovery in DWI Blood Test Cases*

MSE 2011

By Deandra Grant

# Your mission, should you choose to accept it...

# *Let's Start With the Basics.*

What was tested?

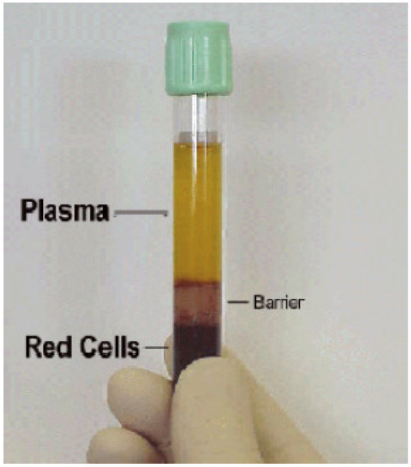
- ❑ Whole blood?
- ❑ Serum/plasma?

Serum/plasma is a part of blood like your toe is a part of your foot.

# Methodology

Whole Blood-LEGAL

**Components:**
Circulating in whole blood is a mixture of:
-Plasma (which contains fluid, proteins, and lipids),
-Formed elements, consisting of red cells, white cells,
and platelets.




Plasma Blood

When centrifuged (or spun down), blood is separated into plasma, and formed elements including red blood cells. The plasma separator tube shown here has a barrier to maintain separation of plasma and cellular elements during centrifugation and storage.

Serum Blood

Serum is the fluid that is left over the coagulum after the specimen is centrifuged (spun down).

Serum contains all the same substances as plasma, except for the coagulation proteins, which are left behind in the blood clot.

# *How Do You Know What You Need?*

Determine the type of testing performed in your case

- Was the blood tested in a forensic lab? (***gas chromatography/whole blood***)
- Was the blood tested in a hospital lab? (***enzymatic/plasma or serum***)

# Whole blood tested in a forensic lab:

SOUTHWESTERN
INSTITUTE OF FORENSIC SCIENCES
AT DALLAS

5230 Medical Center Drive
Dallas, Texas 75235-7710
214-920-5961

**TOXICOLOGY REPORT: FL# 08D0197**

February 26, 2008

Dallas Police Department
1400 South Lamar
Dallas, TX 75215

[redacted]

08 MAR -5 PM 3:03
DALLAS INSTITUTE OF FORENSIC SCIENCES

FILED

**EVIDENCE:**

Received: One tube of blood
Received from: Dallas Police Department Lockbox
Delivered by: M.A. Gibbons #4419
Received by: A. McCall
Date received: February 21, 2008

**RESULTS:**

Alcohol Concentration:
0.18 (grams ethanol per 100 mL blood)

Analyst: A. McCall

Reviewed: D. C. Heartsill

**AFFIDAVIT**

STATE OF TEXAS
COUNTY OF DALLAS

Before me, the undersigned authority, personally appeared A. McCall, who being by me duly sworn, deposed as follows:
"My name is A. McCall. I am over the age of 18 years and capable of making this affidavit. I performed the analysis of the specimen referenced above for alcohol content, at the Southwestern Institute of Forensic Sciences, using a procedure which is recognized in the scientific community for determining the ethyl alcohol content of blood. I am qualified to perform the procedure, and I attest to the results of the analysis, as stated above."

Affiant: _____

SWORN TO AND SUBSCRIBED before me on the ____ day of _____

_____
Linda Valadez, Notary Public-State of Texas

# Plasma or serum tested in a hospital lab:


NURSING PROGRESS NOTES
03:53. Critical value relayed to ED and read back. Alcohol level: 266. ED physician and PA notifed of critical value. --03:53 Skarsten, Cathy, R.N..

**Alcohol level will be found somewhere in the medical records.**

# *Who Has the Information You Need?*

Prosecutors – name of person who drew blood, location of blood draw, type of equipment used, transportation and storage of blood before delivery to lab

Forensic Lab - quality control information regarding the lab

Hospital Lab – information about the specific test run, things that would interfere with the test, quality control information regarding the lab

# *Information You're Not Likely to Get From the Lab*

If a search warrant was obtained, the name of the judge or magistrate who signed it.

The method by which the search warrant was obtained (ie. affidavit sworn to in front of the judge/magistrate, affidavit and warrant faxed to judge/magistrate, etc.).

The name and employer of the nurse or other technician that drew the blood at issue in this case.

The name of each police officer and/or other individual that had possession of the blood sample.

The date and time:

- the blood was drawn
- the blood was transported
- the blood was stored and/or refrigerated
- the blood was logged in to the lab

The type of blood kit used to draw blood in this case along with the following information:

- Blood kit manufacturer
- Blood kit expiration date
- Blood vial manufacturer
- Blood vial expiration date
- Amount of blood drawn
- Amount of preservatives and/or anti-coagulants present in the blood vial prior to blood being drawn

# DOOR #1
# Forensic Lab

# *Blood Tested in a Forensic Lab*

1. The general laboratory protocol or standard operating procedures manual and the protocol or standard operating procedure specific to the test used in this case.

2. The protocol:

- for calibration of all flasks, containers, pipettes, or other equipment used in testing the sample at issue in this case.
- for whatever machine and attached or integrated components were used to test the sample in this case such as the auto sampler and the flame ionization detector.
- for the preparation of all solutions, reagents, mixtures, or other substances used as, as part of, or in relation to or as internal standards, controls, mixtures, or standards in the batch in which the sample in this case was run.
- for quality control of all solutions, reagents, mixtures, or other substances used as, as part of, or in relation to internal standards, controls, mixtures, or standards in the batch in which the sample in this case was run.

3. All refrigeration logs or reports for all refrigerated compartments in which the sample, internal standards, controls, mixtures, standards, and reagents related to the analysis in this case were stored or kept at any time for 12 months prior to the test in this case.

4. All logs, reports or spreadsheets reflecting quality control testing of all flasks, containers, pipettes, or other equipment used in testing the sample at issue in this case.

5. The chromatograms produced from all samples, internal standards, standards, mixtures, and controls run in the batch in which the sample in this case was run as well as linearity plots for the GC used in this case from two years prior to the test in this case to the present.

6. The number of other blood specimens tested at the same time as the sample in this case was tested, as well as any logs or reports reflecting the results of all samples, internal standards, standards, mixtures, and controls run in the batch in which the sample in this case was run.

7. All calibration results and chromatograms for calibrations on the machine on which the sample in this case was tested for 60 days before and after the test at issue in this case.

8. Any quality control certificates and documents reflecting the expiration dates of any solution used in any sample, internal standard, control, mixture, or standard in the batch in which the sample in this case was run if purchased from an outside supplier.

9. The brand and model number of the machine, and all attached or integrated components, that was used for testing in this case. This would include the auto sampler and flame ionization detector.

10. All maintenance or repair records or logs for the machine used in this case and all attached or integrated components for the two years preceding the test in this case and since the test in this case.

11. All chain of custody documents and records specific to the specimen tested in this case.

12. All proficiency testing results for the person who conducted the testing in this case for the three years preceding the test and for any such testing since the testing in this case. This includes the summary report of expected results for the proficiency testing against which the proficiency test results are judged.

13. All lab notes, case files, case reports, or bench notes specific to the test in this case.

14. All documents, including emails, reflecting communications within the lab or between lab personnel and others outside the lab related to the analysis or specimens in this case.

15. All reports of internal audits for the last three years or since the time of the test in this case of the section of the laboratory performing the test used in this case.

16. All reports of external audits for the three years preceding the test in this case and at any time since the test in this case of the section of the laboratory performing the test used in this case.

17. All documents reflecting lab accreditation (for forensic labs, this specifically includes, without limitation ASCLD and DPS accreditation) including the evaluation and report generated as part of the accreditation process.

18. Annual vault inspection reports and records from two years prior to the test in this case to the present.

19. Regarding the person who tested the blood in this case:
    - employee training records
    - employment application less any personal identifying information such as address, phone number or social security number
    - CV and/or resume
    - performance reviews for two years prior to the test in this case to the present.
    - all testimony evaluation forms for two years prior to the test in this case to the present.
    - all Quality Action Plans for or regarding blood alcohol testing for two years prior to the test in this case to the present.
    - annual self assessment reports for two years prior to the test in this case to the present.
    - all client complaints and client complaint logs regarding blood alcohol testing for two years prior to the test in this case to the present.

# DOOR #2
# Hospital Lab

# *Blood Tested in a Hospital Lab*

1. The protocol or standard operating procedure, by whatever name it is known, for all nurses who draw blood for purposes of blood alcohol testing.

2. Any logs, reports or spreadsheets, or other documents, in whatever form, indicating that protocol or standard operating procedure was followed in the blood draw at issue in this case and indicating where specifically the blood draw occurred (direct venopuncture vs. from indwelling IV line, location of venopuncture relative to indwelling IV lines, etc.)

3. Any logs, reports or spreadsheets, or other documents, in whatever form, indicating any IV solutions and/or medications given to the accused prior to blood being drawn.

4. All logs, reports, spreadsheets, or other documents, in whatever form, reflecting any lab abnormalities noted at the time the blood sample was collected.

5. The general laboratory protocol or standard operating procedures manual, by whatever name it is known.

6. The protocol or standard operating procedure, by whatever name it is known, specific to the test used in this case including the commercial name of the test kit used, including a copy of the packaging insert from the manufacturer.

7. The protocol for the preparation of all solutions, reagents, mixtures, or other substances used as, as part of, or in relation to or as internal standards, controls, mixtures, or standards in the batch in which the sample in this case was tested.

8. The quality control protocol for all solutions, reagents, mixtures, or other substances used as, as part of, or in relation to internal standards, controls, mixtures, or standards in the batch in which the sample in this case was tested.

9. All records reflecting internal testing or quality control testing of all solutions, reagents, or mixtures used as, as part of, or in relation to internal standards, controls, mixtures, or standards in the batch in which the sample in this case was tested.

10. If any solution used in any sample, internal standard, control, mixture, or standard in the batch in which the sample in this case was tested was purchased from an outside supplier, any quality control certificate provided by the supplier or manufacturer with or applicable to such solution.

11. Documents reflecting the expiration date of all externally purchased solutions or reagents used in the batch in which the sample in this case was tested.

12. All proficiency testing results for the section of the laboratory testing the sample in this case as well as for the person who conducted the testing in this case -- both for the three years preceding the test and for any such testing since the testing in this case. This specifically includes the summary report of expected results for the proficiency testing (and the manufacturers information sheet) against which the proficiency test results are judged.

13. All lab notes, case files, case reports, or bench notes, by whatever name known, and in whatever form, as well as all documents contained in the testing folder specific to the test in this case. This includes a copy of the case or testing folder itself if it contains any notations or entries.

14. All chain of custody documents and records, whether maintained manually or electronically generated, specific to the specimen(s) in this case.

15. All documents, whether manually maintained or electronically recorded. reflecting, evidencing, or concerning, the identity of any person(s) involved in the acquisition, transportation, transmittal, storage, analysis, disposal, or other possession or manipulation of the specimen(s) from which the analysis in this case was performed.

16. All documents, including emails, reflecting communications within the lab or between lab personnel and others outside the lab regarding the drafting or editing of any audit or quality control report or related to the analysis or specimens in this case.

17. All reports of internal audits for the last three years or since the time of the test in this case of the section of the laboratory performing the test used in this case as well as the report of any overall lab audit that includes machines, components, chemicals, reagents, storage facilities, or anything else used in connection with the testing of the sample, internal standards, controls, mixtures, or standards in the batch in this test.

18. All reports of external audits for the three years preceding the test in this case and at any time since the test in this case of the section of the laboratory performing the test used in this case as well as the report of any overall lab audit that includes machines, components, chemicals, storage facilities, or anything else used in connection with the testing of the sample, internal standard, mixtures, standards, and controls in the batch in this test.

19. All documents reflecting lab accreditation (for forensic labs, this specifically includes, without limitation ASCLD and DPS accreditation) and all reports to or of, or communications to and from, any accrediting entity in the three years prior to the test in this case and at any time since the test in this case. This specifically requests not only the accreditation certificate, but also the evaluation and report generated as part of the accreditation process. The documents should include any accreditation in effect at the time of the test in this case as well as any accreditation subsequent to the time of the test in this case.

20. If the lab received more than one vial or container of blood or other substance, records reflecting which vial was tested in this case.

21. All Quality Action Plans for or regarding blood alcohol testing of or for any person listed on chain of custody documents in this case from two years prior to the test in this case to the present.

22. Annual self assessment reports for from two years prior to the test in this case to the present.

23. All deviation request forms regarding blood alcohol testing from two years prior to the test in this case to the present.

24. The method used to transfer blood from the draw site to the lab. (ie. In person delivery, pneumatic tube system, etc.)

25. Regarding any person listed on chain of custody documents in this case:

    A. Employee training record.
    B. Employment application excluding any personal data such as date of birth, address or social security number.
    C. All CV's and resumes.
    D. Performance reviews for two years prior to the test in this case to the present

**You must obtain the packaging insert from the test cartridge that is used in the hospital lab.**

SIEMENS

REF DF18

**Dimension®** clinical chemistry system

**Flex® reagent cartridge** **ALC**

See shaded sections: Updated information from 2006-08 version. Issue Date 2008-08-19

**Results of this test should always be interpreted in conjunction with the patient's medical history, clinical presentation and other findings.**

## Interfering Substances

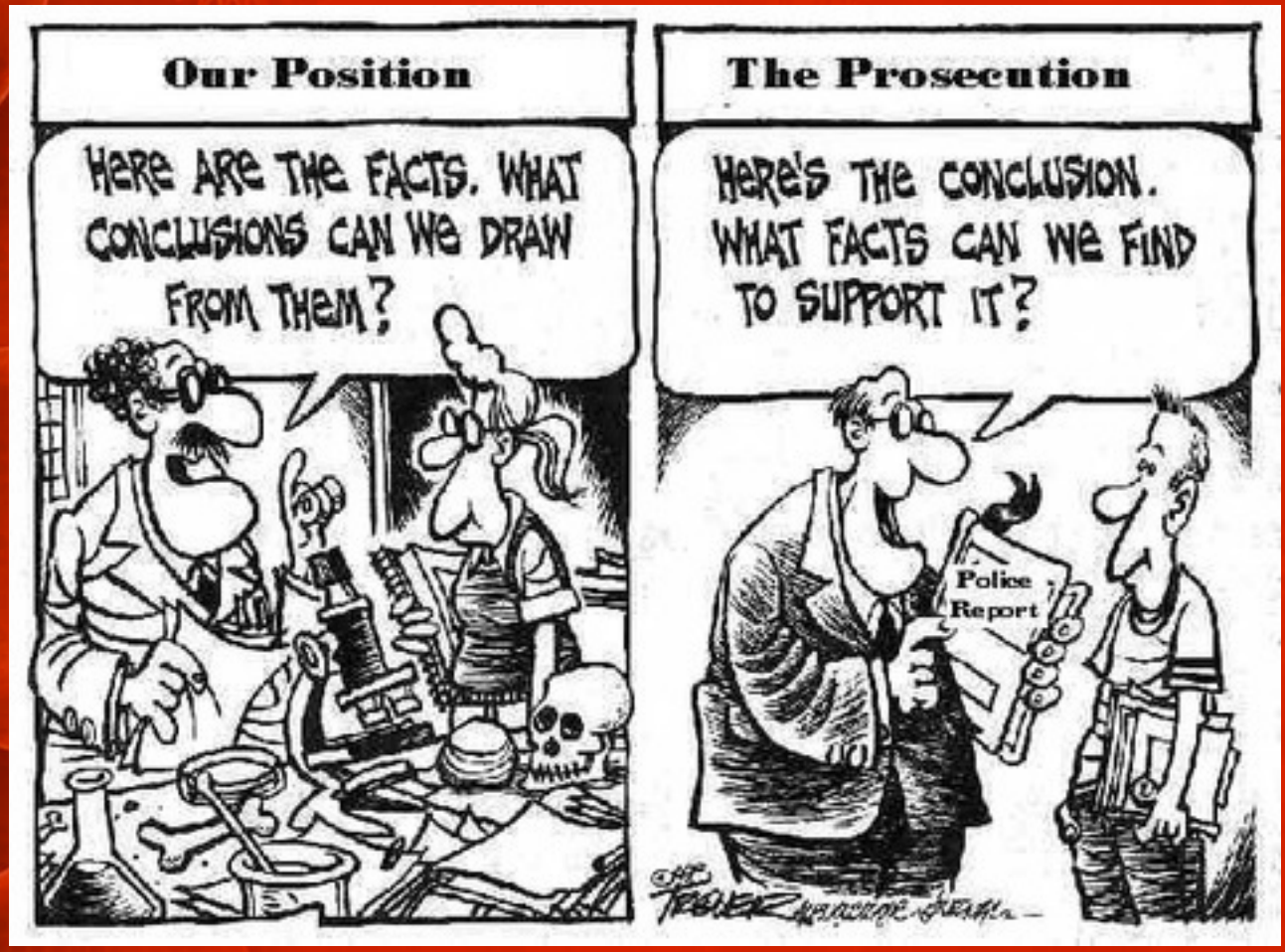
Isopropyl alcohol of 51 mg/dL [8.5 mmol/L] increases the ethyl alcohol by 11 mg/dL [2.4 mmol/L] at an ethyl alcohol concentration of 100 mg/dL [22.0 mmol/L]; Isopropyl alcohol of 254 mg/dL [42.3 mmol/L] increases the ethyl alcohol by 44 mg/dL [9.6 mmol/L] at an ethyl alcohol concentration of 100 mg/dL [22.0 mmol/L].

At ethyl alcohol concentration of 100 mg/dL [22 mmol/L], butanol at 250 mg/dL increases the ALC result by 26.5% and n-propanol at 500 mg/dL increases the ALC result by 57.7%.

## Non-Interfering Substances

The following substances do not interfere with the ALC method when present in serum in the amounts indicated. Systematic inaccuracies (bias) due to these substances are less than 10% at ethyl alcohol concentration of 100 mg/dL [22.0 mmol/L].

| Substance | Test Concentration | SI Units |
|---|---|---|
| Acetaminophen | 0.025 mg/dL | 1.66 µmol/L |
| Acetone | 100 mg/dL | 17.2 mmol/L |
| Amikacin | 15 mg/dL | 256 µmol/L |
| Ampicillin | 5.3 mg/dL | 152 µmol/L |
| Ascorbic Acid | 5 mg/dL | 227 µmol/L |
| Caffeine | 10 mg/dL | 51.5 µmol/L |
| Carbamazepine | 3 mg/dL | 127 µmol/L |
| Chloramphenicol | 5 mg/dL | 155 µmol/L |
| Chlordiazepoxide | 1 mg/dL | 33.3 µmol/L |
| Chlorpromazine | 0.2 ng/dL | 6.27 µmol/L |
| Cholesterol | 500 mg/dL | 12.9 mmol/L |
| Cimetidine | 10 mg/dL | 0.4 mmol/L |
| Creatinine | 30 mg/dL | 2652 µmol/L |
| Dextran 40 | 6000 mg/dL | 1500 µmol/L |
| Diazepam | 0.5 mg/dL | 17.6 µmol/L |
| Erythromycin | 6 mg/dL | 81.6 µmol/L |
| Ethanol | 400 mg/dL | 86.8 mmol/L |
| Ethosuximide | 25 mg/dL | 1770 µmol/L |
| Ethylene Glycol | 250 mg/dL | 40.3 mmol/L |
| Furosemide | 6 mg/dL | 181 µmol/L |
| Gentamicin | 12 µg/dL | 25 µmol/L |
| Heparin | 3 U/mL | 3000 U/L |
| Ibuprofen | 50 mg/dL | 2425 µmol/L |
| Immunoglobulin G | 5 g/dL | 50 g/L |
| Lactic Acid | 100 mg/dL | 11.1 mmol/L |
| Lidocaine | 1.2 mg/dL | 51.2 µmol/L |
| Lithium | 2.3 mg/dL | 3.2 mmol/L |
| Mannitol | 500 mg/dL | 27.4 mmol/L |
| Methanol | 100 mg/dL | 31.2 mmol/L |
| Nicotine | 2 mg/dL | 0.1 mmol/L |
| Penicillin G | 25 U/mL | 25000 U/L |
| Pentobarbital | 8 mg/dL | 354 µmol/L |
| Phenobarbital | 10 mg/dL | 421 µmol/L |
| Phenytoin | 5 mg/dL | 198 µmol/L |
| Primidone | 4 mg/dL | 183 µmol/L |
| Propoxyphene | 0.2 mg/dL | 4.91 µmol/L |
| Protein: Albumin | 6 g/dL | 60 g/L |
| Protein: Total | 12 g/dL | 120 g/L |
| Salicylic Acid | 60 mg/dL | 4.34 mmol/L |
| Theophylline | 4 mg/dL | 222 µmol/L |
| Triglycerides | 3000 mg/dL | 33.9 mmol/L |
| Urea | 500 mg/dL | 83.3 mmol/L |
| Uric Acid | 20 mg/dL | 1190 µmol/L |
| Valproic Acid | 50 mg/dL | 3467 µmol/L |


Our Position
HERE ARE THE FACTS. WHAT CONCLUSIONS CAN WE DRAW FROM THEM?
The Prosecution
HERE'S THE CONCLUSION. WHAT FACTS CAN WE FIND TO SUPPORT IT?
Police Report

# *This tape will self-destruct in 5 seconds…*

# Deandra M. Grant

AV-rated attorney Deandra Grant's practice is focused on DWI defense in Dallas and Collin County, Texas. She is a national speaker on DWI law and science and is the co-author of ***The Texas DWI Manual*** , scheduled for re-release in 2011. She is also the author of the popular Texas DWI Gal blog and the founder of the Texas DWI Defenders list serve. Deandra has completed the SFST certification course, the SFST instructor course, a drug recognition course and is one of the few attorneys to pass the Forensic Sobriety Assessment Certification exam. In addition, she has completed coursework in DWI forensic blood and urine testing and was trained as an operator and maintenance technician of the Intoxilyzer 5000. Deandra is a member of NCDD, NACDL, TCDLA, the Dallas Bar Association, the Collin County Criminal Defense Lawyers Association and has served on the Board of the Dallas Criminal Defense Lawyers Association since 2007. *D Magazine* named Deandra to its list of Best Women Lawyers in Dallas 2010 and Best Lawyers in Dallas 2011.